

What is claimed is:

1     ~~Sub B<sub>3</sub>~~ 1. A solder joint configuration at and near an  
2     intermetallic layer that disrupts, constrains, or lengthens  
3     cracking at said intermetallic boundary, thereby increasing  
4     fatigue life of the solder joint, comprises a pad having an  
5     irregular boundary layer.

1             2. Configuration at an intermetallic boundary that  
2     disrupts, constrains, or lengthens cracking at said  
3     intermetallic boundary, thereby increasing fatigue life of  
4     the solder joint, comprises a solder strip having a  
5     serpentine boundary layer.

1     ~~Sub B<sub>4</sub>~~ 3. A solder joint configuration at an intermetallic  
2     boundary that disrupts, constrains, or lengthens cracking at  
3     said intermetallic boundary, thereby increasing fatigue life  
4     of the solder joint, comprises a pad having an  
5     interdigitated boundary layer.

1           4. A solder joint configuration at an intermetallic  
2 boundary that disrupts, constrains, or lengthens cracking at  
3 said intermetallic boundary, thereby increasing fatigue life  
4 of the solder joint, comprising a pad having a curved  
5 boundary layer.

1           5. A solder joint configuration at an intermetallic  
2 boundary in accordance with claim 4, wherein said curved  
3 boundary layer further comprises a substantially continuous  
4 structure.

1           6. A method of soldering that disrupts, constrains, or  
2 lengthens cracking at an intermetallic boundary, whereby  
3 fatigue life of a solder joint is increased, comprising the  
4 steps of:

5           a) placing solder at a pad; and

6           b) configuring said solder to provide an  
7 irregular boundary layer during bonding at  
8 said pad in order to increase fatigue life of  
9 said solder joint.

1 7. A method of soldering that disrupts, constrains, or  
2 lengthens cracking at an intermetallic boundary, whereby  
3 fatigue life of a solder joint is increased, comprising the  
4 steps of:

5 a) placing solder at a pad; and

6 b) configuring said solder to provide a  
7 serpentine boundary layer during bonding at  
8 said pad in order to increase fatigue life of  
9 said solder joint.

1 8. A method of soldering that disrupts, constrains, or  
2 lengthens cracking at an intermetallic boundary, whereby  
3 fatigue life of a solder joint is increased, comprising the  
4 steps of:

5 a) placing solder at a pad; and

6 b) configuring said solder to  
7 provide a digitated boundary layer  
8 during bonding at said pad in order to  
9 increase fatigue life of said solder joint.